

## WHAT IS CLAIMED IS:

1. A wireless transmitter-receiver set for a mobile phone, comprising:

5 a base unit, having an extension piece with a voice receiver and an accommodating space, furthermore housing a transmitter circuit and a battery chamber into which a first battery is inserted; and

10 a remote unit, having a receiver circuit, a remote speaker and a battery chamber into which a second battery is inserted.

2. A wireless transmitter-receiver set for a mobile phone according to claim 1, wherein said transmitter circuit of said base unit further comprises:

15 a power source, powering said transmitter circuit and being powered by said first battery;

a voice receiver, receiving a voice signal from a speaker of a mobile phone handset and transmitting said voice signal to be amplified and power controlled;

20 an amplifier, amplifying said voice signal and transmitting said voice signal to be modulated;

an oscillator, generating an oscillating signal and transmitting said oscillating signal;

25 a modulator, modulating said voice signal with said oscillating signal, generating a modulated voice signal;

a first radio-frequency amplifying circuit, amplifying said modulated voice signal and emitting said modulated voice signal via an antenna; and

30 a power controller: the amplified voice signal being treated under control such that the radio-frequency

amplifier being supplied with power during the mobile phone being connected and being not supplied with power during the mobile phone being alert or not in use.

3. A wireless transmitter-receiver set for a mobile phone according to claim 1, wherein said receiver circuit of said remote unit further comprises:

a power source, powering said receiver circuit, powered by said second battery;

a second radio-frequency amplifying circuit, receiving a radio signal from said transmitter circuit by an antenna, amplifying said radio signal and transmitting said radio signal to be demodulated;

a demodulator, demodulating said radio signal, generating a demodulated signal and an intermediate-frequency and transmitting said demodulated signal to be amplified and power controlled;

a power amplifying circuit, amplifying said demodulated signal and driving said remote speaker; and

a power control circuit, receiving said demodulated intermediate-frequency signal and controlling said power source;

whereby, said power amplifying amplifier can be supplied with power while said mobile phone is connected and switched off power while said mobile phone is in a state of standing by or not in use.

4. A wireless transmitter-receiver set for a mobile phone according to claim 1, wherein said extension piece of said base unit is expandable and contractible.

5. A wireless transmitter-receiver set for a mobile phone according to claim 1, wherein said voice receiver of

is a microphone or the like..

6. A wireless transmitter-receiver set for a mobile phone according to claim 1, wherein said voice receiver on said extension piece is flexibly oriented at various angles to adapt to every shape of mobile phone handsets.

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